

	H. Wagner	8-24-10

EA Shuttle Document Retention Effort

Dr. Howard A Wagner

Background

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- EA4 was tasked with identifying and acquiring databases and documents from the Space Shuttle Program that we want to retain after the shuttle retires
- Discussions with EA CEs and DCEs have identified the following databases that we want to acquire for knowledge capture (not a complete listing):
 - JSC PRACA
 - Certification Data
 - ODRC Flight Data
 - Space Shuttle Boards Presentations
 - Launch Commit Criteria database
 - MER Greenbook
 - KSC SIMS Imagery Database
 - Non-Conformance Signature Log (NCSL) MR database
 - Aging Vehicle Assessment Database
 - Space Shuttle Drawing System
 - Space Shuttle Program Documentation
 - Shuttle Operations Data Book
 - Orbiter Hardware Upgrades Recommendations
 - Shuttle Imagery Databases

EA Division Activities

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- Introduce the JSC Taxonomist – Sara Berndt (x33940)
- Taxonomy is the practice and science of classification. The taxonomist can help determine appropriate file structure for data archiving.
- Each Division should be archiving/scanning files associated with the space shuttle program that could be of use for knowledge capture.
 - Includes files for the DCEs, NSEs, and the Tech Panel leads
 - What is being done
 - What database is being used to house the files
 - What progress has been made on archiving files (% complete)

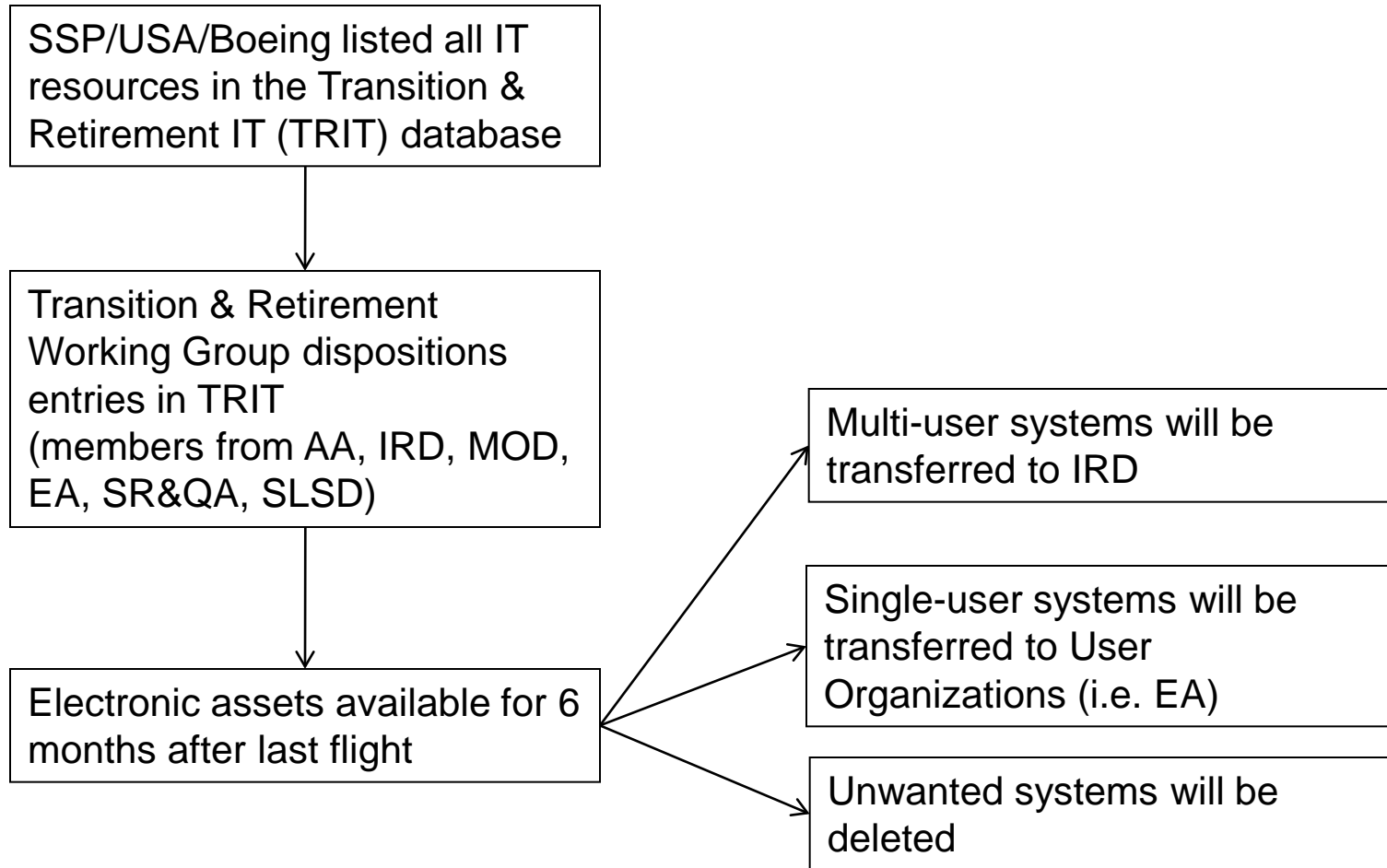
Transition & Retirement Process

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- A Transition & Retirement working group was established at JSC to coordinate to retention of the Shuttle program generated databases and electronic files
- Each organization at JSC was asked to identify the databases that they desire to have continued access to after the end of the Shuttle program
- The JSC Center Director has directed that the Information Resources Directorate (IRD) take ownership of those databases that will have multiple organizations requesting access.
- The individual organization will take ownership of those databases where they are the only organization that has expressed interest in.
- All the remaining paper files are being cataloged for transport to the Federal Records Center in Ft Worth for temporary storage.

Electronic File Disposition Process



Paper Records Disposition Process

SSP/USA/Boeing sifting thru all paper files to classify as Permanent or Temporary records

SSP/USA/Boeing ship all paper files to Federal Records Center (FRC) in Ft Worth (in work)

Permanent records will be retained at FRC for 7 yrs

After 7 yrs the Permanent records will be transferred to the National Archives

During the 7 yrs bring the Permanent records back to JSC EA for scanning

Enter electronic files into DDMS

Send paper files to the National Archives

Temporary records will be retained at FRC for 20 yrs

During the 20 yrs bring the Temporary records back to JSC EA for scanning

Enter electronic files into DDMS

Recycle the paper files

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Backup

File Server Space		
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- Adding a one TeraByte hard drive would cost approximately \$15K per year
- All of the desired databases would require around 0.5 TeraByte
 - Estimate based on file space of the databases where I do have an estimated file size

JSC PRACA database

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- These include CAR's (Corrective Action Reports), CAR closure reports, NFC's, and sub-CAR's (instructions that direct F/A steps).
 - Plan was to port data one time to Constellation Bugzilla.
 - With cancellation of CxP will need to find a new home for these records
 - Transfer electronic records to TBD
 - Paper records will be sent to the FRC
- Size of the data files :
 - TBD
- Application software required
 - TBD database
 - TBD web server applications

NCSL (MR database)		
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- Non-Conformance Signature Log is a listing of the MRs that required JSC Engineering signature
- The server space (files and folders) today is a bit over 11 GB.
- The database consists of 16 tables; most of which are look-up tables. The 2 main tables each contain over 10,500 rows. This is an Oracle 9i database, using 20 MB allocated space.
- Each new record created in the main tables creates a new folder on the server where files are uploaded.

Certification Database

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- Transfer the electronic files to JSC Engineering
- Paper copies will be sent to FRC for storage
- Size of the data files :
 - TBD
- Application software required
 - TBD database
 - TBD web server applications

Aging Vehicle Assessment Database		
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- Transfer electronic files to JSC Engineering. There are no paper files.
- Size of the data files :
 - 1.6 Gbytes for the AVA Action Tracking database
 - 2.5 Gbytes for the AVA Data Repository
- Application software required
 - Oracle 9 and 10 databases
 - ColdFusion and BEA Weblogical 9.2 web server applications
 - Documentum 5.3 sp5; index server; Render server

ODRC Flight Data

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- Actual data from every flight
- MOD intends to keep the ODRC data on the servers
- No action required from JSC Engineering
- Will need to maintain the JSC MEWS system to plot and display the data files

Shuttle Drawing System

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- Transfer electronic files to JSC Engineering. There are no paper files.
- Size of the data files : 140 Gbytes
- Application software required
 - Oracle 7.3.4 database (stores the metadata);
 - CERN 3.0a web server to run the SDS application (allows access to the drawings and queries the database)
- We only need the ability to search for a drawing. We will not be modifying any drawings or adding any new drawings to the database after the transfer is complete.
- The files need to be protected for export control.

Automated Documentation Request System (ADRS)		
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- The majority of the subsystem's vendor drawings are kept at the Mfg Document & Logistics Data Center located at NSLD. These include all the vendor assembly and piece part drawings for most of the subsystem's components. For example: VACCO drawings for the RCS Helium Isolation Valves, MOOG drawings for our Elevon Actuators, etc.
- <https://usa2.usa-spaceops.com/usano/orgs/61300/61350/61355/TDWebsite/index.cfm>
- Size of the data files :
 - TBD
- Application software required
 - TBD database
 - TBD web server applications
- For information regarding ADRS documentation requests, please contact:
 NSLD Tech Data: **321-799-7295** techdata@usa-spaceops.com or
 Technical POC: Annie Dupree: 321-799-6142 dupreead@usa-spaceops.com

Shuttle Board Presentations

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- Pitches, minutes from OPOTT's, CCB's, PRCB's, Daily PRCB's, JSERP's, SICB's, etc.
- These presentations document the decision making process. Component improvement/upgrade background and checkout waiver rationale would be the most historically beneficial data in this group.
- Electronic files TBD action
- Paper files will be sent to the FRC

Shuttle Program Documents

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- Program documentation from the SSPWEB
- Transfer electronic files to JSC Engineering
- Paper copies will be sent to the FRC
- Size of the data files :
 - TBD
- Application software required
 - TBD database
 - TBD web server applications

LCC Database

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- Size of the data files :
 - TBD
- Application software required
 - TBD database
 - TBD web server applications

Shuttle Operations Data Book

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- Size of the data files :
 - TBD
- Application software required
 - TBD database
 - TBD web server applications

MER Greenbook

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- Size of the data files :
 - TBD
- Application software required
 - TBD database
 - TBD web server applications

Orbiter Hardware Upgrade Recommendations		
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- EA generated documents on shuttle upgrades that did not get implemented but may provide valuable data for future programs.
- Transfer electronic files from MV to JSC Engineering
- Paper copies will be sent to the FRC
- Size of the data files :
 - TBD
- Application software required
 - TBD database
 - TBD web server applications

KSC SIMS Database

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<https://usa31.usa-spaceops.com:8101/wdk/component/sims?docbase=EDCSI>

- Closeout photos.
- Size of the data files :
 - TBD
- Application software required
 - TBD database
 - TBD web server applications

Shuttle Imagery Databases

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- Various Shuttle related imagery databases.

[NASA Imagery - STS Missions](#)

[SE&I Imagery Website](#)

[ISD Video Clips](#)

[Imagery Ops Integration Homepage](#)

[NASA Imagery Reporting Database \(NIRD\)](#)

[TPS Inspection Imagery Management System \(TIIMS\)](#)

- Need to understand how these imagery databases will be dispositioned at the end of the shuttle program.

Conclusions

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- Most of the external databases are in some version of Oracle
 - Either purchase Oracle for the EA server or develop equivalent database in SQL
 - Oracle costs \$47,500/processor and \$10,450 per year to maintain
- We will need IT support to review the databases and determine the effort required to convert from Oracle to SQL
- JSC Engineering will not become the Office of Records for these files